

## Lamin B1 mouse specific

Cat.No. HS-404 117; Monoclonal rat antibody, 100 µg purified IgG (lyophilized)

### Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For <b>reconstitution</b> add 100 µl H <sub>2</sub> O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	<b>WB:</b> 1 : 1000 (AP-staining) <b>IP:</b> not tested yet <b>ICC:</b> 1 : 100 <b>IHC:</b> 1 : 400 <b>IHC-P:</b> 1 : 100 up to 1 : 400
Clone	SY-4H6
Subtype	IgG2b (κ light chain)
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of mouse Lamin B1 (UniProt Id: P14733)
Reactivity	Reacts with: mouse (P14733), pig. No signal: human (P20700), rat (P70615). Other species not tested yet.
Remarks	<b>ICC:</b> Methanol fixation is recommended.

**TO BE USED IN VITRO / FOR RESEARCH ONLY**  
**NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS**

## Background

Lamin B1 (LMNB1) is an intermediate filament-type protein of the nuclear lamina and is ubiquitously expressed throughout development. It plays important roles in many cellular processes like the distribution of heterochromatin and the regulation of gene expression and splicing. The maintenance of LMNB1 protein levels is required for DNA replication and repair and thus mutations in B-type lamins are usually lethal.

Duplication of the LMNB1 gene causes adult-onset autosomal-dominant leukodystrophy (ADLD), a rare neurological disorder in which overexpression of LMNB1 causes progressive central nervous system demyelination. Improper Lamin B1 expression is often present in tumor cells and decreased levels are observed for example in colon cancer, breast cancer and B-cell malignancies. Lamin B1 loss is also a senescence-associated biomarker and distinguishes senescent from proliferating cells in pre-neoplastic lesions or marks senescent cells in various age-related pathologies.

## Selected General References

- Lamin B1 regulates somatic mutations and progression of B-cell malignancies.  
Klymenko T et al. Leukemia (2018) PubMed:28804121
- SEPT12/SPAG4/LAMINB1 complexes are required for maintaining the integrity of the nuclear envelope in postmeiotic male germ cells.  
Yeh CH et al. PLoS ONE (2015) PubMed:25775403
- Role of lamin b1 in chromatin instability.  
Butin-Israeli V et al. Mol. Cell. Biol. (2015) PubMed:25535332
- The role of lamin B1 for the maintenance of nuclear structure and function.  
Camps J et al. Nucleus (2015) PubMed:25602590
- Redistribution of the Lamin B1 genomic binding profile affects rearrangement of heterochromatic domains and SAHF formation during senescence.  
Sadaie M et al. Genes Dev. (2013) PubMed:23964094
- The clinicopathological significance of lamin A/C, lamin B1 and lamin B receptor mRNA expression in human breast cancer.  
Wazir U et al. Cell. Mol. Biol. Lett. (2013) PubMed:24293108
- Lamin B1 loss is a senescence-associated biomarker.  
Freund A et al. Mol. Biol. Cell (2012) PubMed:22496421
- The integrity of a lamin-B1-dependent nucleoskeleton is a fundamental determinant of RNA synthesis in human cells.  
Tang CW et al. J. Cell. Sci. (2008) PubMed:18334554
- Lamin B1 is required for mouse development and nuclear integrity.  
Vergnes L et al. Proc. Natl. Acad. Sci. U.S.A. (2004) PubMed:15232008
- Decreased and aberrant nuclear lamin expression in gastrointestinal tract neoplasms.  
Moss SF et al. Gut (1999) PubMed:10517909
- Binding of matrix attachment regions to lamin B1.  
Ludérus ME et al. Cell (1992) PubMed:1525831
- Teratocarcinoma stem cells and early mouse embryos contain only a single major lamin polypeptide closely resembling lamin B.  
Stewart C et al. Cell (1987) PubMed:3311384

Access the online factsheet including applicable protocols at <https://sysy-histosure.com/product/HS-404117> or scan the QR-code.



## FAQ - How should I store my antibody?

### Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

### Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

### Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

### Product Specific Hints for Storage

#### Control proteins / peptides

- Store at -20°C to -80°C.

#### Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

#### Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

#### Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

## Avoid repeated freeze-thaw cycles for all antibodies!

## FAQ - How should I reconstitute my antibody?

### Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.